

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A mixer comprising:
a multiplier circuit having a first and a second mixer, the first mixer comprising a first number of transistors and the second mixer comprising a second number of transistors, the first number being different than the second number; and
a generator for generating two first and two second control signals for controlling said first and second mixers,
wherein said two first control signals have a frequency f_1 and said two second control signals have a different frequency f_2 .
2. (Original) The mixer of claim 1, wherein said two first and two second control signals are balanced signals.
3. (Original) The mixer of claim 1, wherein said two first and two second control signals are single-ended signals.
4. (Currently Amended) A mixer for I/Q quadrature signal generation, comprising:
a first multiplier circuit having a first and a second mixer, the first mixer comprising a first number of transistors and the second mixer comprising a second number of transistors, the first number being different than the second number;
a second multiplier circuit having a third and a fourth mixer, the third mixer comprising a third number of transistors and the fourth mixer comprising a fourth number of transistors, the third number being different than the fourth number; and

a generator for generating two first and two second control signals for controlling said first and second mixers and two third and two fourth control signals for controlling said third and fourth mixers,

wherein said two first, two second, two third and two fourth control signals are in each case balanced signals, whereby said two first and two third control signals have a frequency f_1 and said two second and two fourth control signals have a different frequency f_2 , and

either said signals at frequency f_1 or at frequency f_2 are provided in four phases each shifted by $\pi/2$.

5. (Original) The mixer of claim 4, wherein said first and second multiplier circuits each comprise a Gilbert cell having a plurality of transistors, where all transistors are used as switches.

6. (Original) The mixer of claim 4, wherein said generator comprises a frequency derivation circuit.

7. (Original) The mixer of claim 4, wherein the frequencies f_1 and f_2 of said control signals differ from an operation frequency of said generator.

8. (Original) The mixer of claim 6, wherein the frequency derivation within said frequency derivation circuit is executed by using frequency division.

9. (Original) The mixer of claim 6, wherein the frequency derivation within said frequency derivation circuit is executed by using frequency multiplication.

10. (Original) The mixer of claim 8, wherein voltages or currents within the circuit avoid the sum frequency $f_1 + f_2$.

11. (Original) The mixer of claim 8, wherein voltages or currents within the circuit avoid the difference frequency $f_1 - f_2$.

12. (New) The mixer of claim 1, wherein the first mixer comprises two transistors and the second mixer comprises four transistors.

13. (New) The mixer of claim 1, wherein the two first control signals are complementary and the two second control signals are complementary.

14. (New) The mixer of claim 1, wherein said multiplier circuit comprises a Gilbert cell having a plurality of transistors, where all transistors are used as switches.

15. (New) The mixer of claim 4, wherein the first mixer comprises two transistors and the second mixer comprises four transistors.

16. (New) The mixer of claim 4, wherein the third mixer comprises two transistors and the fourth mixer comprises four transistors.

17. (New) The mixer of claim 4, wherein the two first control signals at frequency f_1 are complementary and the two third control signals at frequency f_1 are complementary.

18. (New) The mixer of claim 4, wherein said control signals at frequency f_2 are provided in four phases each shifted by $\pi/2$.